

WHAT IS CLAIMED IS:

1. A device for collecting water from air, comprising:
  - a housing, wherein a bottom of said housing comprises a first compartment and a second compartment;
  - a precooler heat exchanger, disposed within said housing that receives an air stream, wherein said air stream is cooled close to its dew point by said precooler heat exchanger;
  - a water extraction heat exchanger, disposed within said housing adjacent said precooler heat exchanger, wherein said water extraction heat exchanger further cools said air stream and extracts water therefrom;
  - a condensed water collection device, disposed adjacent to said water extraction heat exchanger that collects said extracted water;
  - a water storage tank, disposed in said first compartment of said housing, wherein said water is directed by said condensed water collection device into said water storage tank;
  - a reheat heat exchanger, disposed within said housing adjacent to said water extraction heat exchanger, wherein said air stream is heated by said reheat heat exchanger;
  - an exhaust outlet in said housing that permits said air stream to exit said housing;
  - a fan disposed within said housing that establishes the flow of said air stream into said housing through said precooler heat exchanger and out of said housing through said exhaust outlet;
  - a closed loop refrigerant circuit connecting a condenser and an evaporator through which a refrigerant flows from said condenser through an expansion valve to said evaporator and from said evaporator through a compressor into said condenser, wherein said closed looped refrigerant circuit is disposed in said second compartment of said housing; and
  - a closed loop water circulation circuit through which a water stream is extracted from said water storage tank by a water circulation pump and flows

to said evaporator, wherein said water stream is chilled, and said water stream flows from said evaporator through said water extraction heat exchanger, said precooler heat exchanger, and said reheat heat exchanger, to said water storage tank.